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     (FILE 'HOME' ENTERED AT 08:43:46 ON 23 JUL 2007)

     FILE 'BIOSIS, CAPLUS, EMBASE, MEDLINE, JAPIO' ENTERED AT 08:44:04 ON 23
     JUL 2007
L1         34282 S MALDI
L2         25195 S L1 AND MATRIX?
L3            97 S L2 AND EMBED?
L4            88 S L3 AND DESOR?
L5            38 S L4 AND PD<2003
L6            24 DUPLICATE REMOVE L5 (14 DUPLICATES REMOVED)
L7             3 S L6 AND CLEAV?
L8            21 S L6 NOT L7

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L1        34282 S MALDI
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L5           38 S L4 AND PD<2003
L6           24 DUPLICATE REMOVE L5 (14 DUPLICATES REMOVED)
L7            3 S L6 AND CLEAV?
L8           21 S L6 NOT L7

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ANSWER 16 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1996:308044 CAPLUS
DN 124:335776
ED Entered STN: 25 May 1996
TI Matrix-assisted laser desorption-ionization (MALDI) mass spectrometry of biological molecules
AU Karas, M.; Bahr, U.
CS Institute Medical Physics and Biophysics, University Munster, Muenster, 48149, Germany
SO NATO ASI Series, Series C: Mathematical and Physical Sciences (1996), 475(Mass Spectrometry in Biomolecular Sciences), 33-49
CODEN: NSCSDW; ISSN: 0258-2023
PB Kluwer
DT Journal; General Review
LA English
CC 6-0 (General Biochemistry)
Section cross-reference(s): 9
AB A review with 72 refs. Matrix-assisted laser desorption /ionization mass spectrometry (MALDI-MS) is an anal. technique for fast and precise mass determination of biol. mols. Intact mol. ions are produced by short pulsed laser irradiation of the biomols. which are embedded in a matrix consisting of small highly absorbing organic mols. Mass anal. is carried out in a linear or reflector time-of-flight mass spectrometer. The accessible mass range is 500 000 Da, a mass accuracy of up to 0.01 % can be reached, the sample amts. required are 1 pmol or less. Proteins, glycoproteins, oligonucleotides and oligosaccharides can be analyzed.
ST MALDI protein glycoproteins oligonucleotides oligosaccharides review; mass spectrometry MALDI matrix biomol review
IT Glycoproteins, properties
Oligosaccharides
Proteins, properties
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(a review of matrix-assisted laser desorption -ionization (MALDI) mass spectrometry of biol. mols.)
IT Molecules
(biochem., a review of matrix-assisted laser desorption-ionization (MALDI) mass spectrometry of biol. mols.)
IT Nucleotides, properties
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(oligo-, a review of matrix-assisted laser desorption -ionization (MALDI) mass spectrometry of biol. mols.)
IT Mass spectrometry
(photodesorption/photoionization, laser-induced, matrix assisted; a review of matrix-assisted laser desorption-ionization (MALDI) mass spectrometry of biol. mols.)

ANSWER 16 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
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ST MALDI protein glycoproteins oligonucleotides oligosaccharides review; mass spectrometry MALDI matrix biomol review
IT Glycoproteins, properties
Oligosaccharides
Proteins, properties
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(a review of matrix-assisted laser desorption -ionization (MALDI) mass spectrometry of biol. mols.)
IT Molecules
(biochem., a review of matrix-assisted laser desorption-ionization (MALDI) mass spectrometry of biol. mols.)
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RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(oligo-, a review of matrix-assisted laser desorption -ionization (MALDI) mass spectrometry of biol. mols.)
IT Mass spectrometry
(photodesorption/photoionization, laser-induced, matrix assisted; a review of matrix-assisted laser desorption-ionization (MALDI) mass spectrometry of biol. mols.)

ANSWER 17 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1996:222109 CAPLUS
ED Entered STN: 16 Apr 1996
TI Functionality analysis of polymers by MALDI-MS
AU Pasch, H.
CS Deutsches Kunststoff-Institut, Darmstadt, 64289, Germany
SO Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March 24-28 (1996), POLY-374 Publisher: American Chemical Society, Washington, D. C.
CODEN: 62PIAJ
DT Conference; Meeting Abstract
LA English
AB Matrix-assisted laser desorption ionization mass spectrometry (MALDI-MS) is a new, most promising method for the anal. of oligomers and polymers with respect to molar mass and chemical composition By embedding macromols. in a suitable matrix and irradiating the sample with laser pulses, intact mol. ions are produced, which are analyzed in a time-of-flight mass spectrometer. A major advantage of MALDI-MS over other MS techniques is the significant reduction of fragmentation and the extended mass range. The talk will discuss the application of MALDI-MS in functionality anal. of telechelic oligomers and macromonomers. It will demonstrate that in addition to molar mass information the functionality type distribution can be obtained. In combination with liquid chromatog. MALDI-MS can be used as a molar mass and chemical composition sensitive detector.

ANSWER 19 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1994:625574 CAPLUS
DN 121:225574
ED Entered STN: 12 Nov 1994
TI Detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer
AU Li, Yunzhi; McIver, Robert T., Jr.
CS Dep. Chem., Univ. California, Irvine, CA, 92717, USA
SO Rapid Communications in Mass Spectrometry (1994), 8(9), 743-9
CODEN: RCMSEF; ISSN: 0951-4198
DT Journal
LA English
CC 9-5 (Biochemical Methods)
AB Sensitivity in the low-femiomole range with mass resolution greater than 20000 is demonstrated for several polypeptides analyzed by a mass spectrometer that pairs matrix-assisted laser desorption /ionization (MALDI) and Fourier-transform mass spectrometry (FTMS). The compds. investigated were substance P, renin substrate, melittin, the B-chain of the bovine insulin, and bovine insulin. Standard solns. of the polypeptides were prepared with 30% acetonitrile + water, and micropipettes were used to transfer small amts. (1-20 fmol) to a sample probe. The samples were embedded in a large excess of matrix material (2,5-dihydroxybenzoic acid) and ionized by a pulse from an excimer laser. The FTMS instrument used for these expts. has the MALDI source in a sep. chamber outside the magnetic field. Ions are extracted from the source and transported by an RF-only quadrupole ion guide to an FTMS analyzer cell mounted in the homogeneous region of a 6.5 T supercond. magnet. The high sensitivity of MALDI-FTMS is due, in part, to the high transfer efficiency of the ion guide, even for ions with a wide range of kinetic energies. The ion guide is easy to use because there are only two adjustments (RF amplitude and DC offset voltage), and unlike electrostatic ion transport means, alignment of it with the axis of the magnetic field is not critical The mass resolution and sensitivity of MALDI-FTMS is compared with that of MALDI done with time-of-flight, magnetic sector, and quadrupole ion-trap mass spectrometers.
ST protein detection laser desorption mass spectrometry; Fourier transform mass spectrometer protein detection
IT Ion sources
Spectrometers
(detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)
IT Proteins, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)
IT 9004-10-8, Insulin, analysis
RL: ANT (Analyte); ANST (Analytical study)
(B-chain; detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)
IT 11002-13-4, Renin substrate 20449-79-0, Melittin 33507-63-0, Substance P
RL: ANT (Analyte); ANST (Analytical study)
(detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)

ANSWER 19 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1994:625574 CAPLUS
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ED Entered STN: 12 Nov 1994
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DT Journal
LA English
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ST protein detection laser desorption mass spectrometry; Fourier transform mass spectrometer protein detection
IT Ion sources
Spectrometers
(detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)
IT Proteins, analysis
RL: ANT (Analyte); ANST (Analytical study)
(detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)
IT 9004-10-8, Insulin, analysis
RL: ANT (Analyte); ANST (Analytical study)
(B-chain; detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)
IT 11002-13-4, Renin substrate 20449-79-0, Melittin 33507-63-0, Substance P
RL: ANT (Analyte); ANST (Analytical study)
(detection limits for matrix-assisted laser desorption of polypeptides with an external ion source Fourier-transform mass spectrometer)

ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:609580 CAPLUS
DN 136:263433
ED Entered STN: 22 Aug 2001
TI N-Cα bond cleavage of the peptide backbone via hydrogen abstraction
AU Takayam, Mitsuo
CS Graduate School of Sciences, Yokohama City University, Yokohama, 236-0027, Japan
SO Journal of the American Society for Mass Spectrometry (2001), 12(9), 1044-1049
CODEN: JAMSEF; ISSN: 1044-0305
PB Elsevier Science Inc.
DT Journal
LA English
CC 34-3 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 22, 73
AB The specific cleavage of N-Cα bonds on the peptide backbone to form the so-called 'c' and 'z +2' products, which can be used for the rapid determination of protein amino-acid sequences, has been examined to clarify the mechanism(s) that occur during hydrogen abstraction induced by bombardment with 337-nm laser photons in matrix-assisted laser desorption/ionization (MALDI) method. Intramol. hydrogen abstraction, which results from the hydrogen(s) on the Cα or Cβ carbon, did not occur with a deuterium-labeled dodecapeptide. To confirm a proposition that intermol. hydrogen abstraction occurs between the peptide and the MALDI matrix, a deuterium dodecapeptide embedded in a deuterium 2,5-dihydroxybenzoic acid matrix at a molar ratio of 1:7000 was analyzed. The resulting deuterium c product ions suggested that c ions form via intermol. hydrogen abstraction, although the results obtained did not deny any other possibilities such as intramol. transfer of labile hydrogen. A mechanism for the N-Cα bond cleavage has been proposed that the formation of hypervalent radical species and subsequent prompt bond cleavages occur. The proposed mechanism successfully rationalizes the formation of both the z +2 and the c product ions.
ST bond cleavage peptide MALDI deuterium exchange mol structure detn
IT Laser ionization mass spectrometry
(photodesorption, matrix-assisted; study of N-Cα bond cleavage of the peptide backbone via hydrogen abstraction using MALDI and deuterium exchange techniques)
IT Laser desorption mass spectrometry
(photoionization, matrix-assisted; study of N-Cα bond cleavage of the peptide backbone via hydrogen abstraction using MALDI and deuterium exchange techniques)
IT Bond cleavage
Exchange reaction
Molecular structure determination methods
(study of N-Cα bond cleavage of the peptide backbone via hydrogen abstraction using MALDI and deuterium exchange techniques)
IT Peptides, properties
RL: PRP (Properties)
(study of N-Cα bond cleavage of the peptide backbone via hydrogen abstraction using MALDI and deuterium exchange techniques)
IT 404956-26-9 404956-28-1
RL: PRP (Properties)
(study of N-Cα bond cleavage of the peptide backbone via hydrogen abstraction using MALDI and deuterium exchange techniques)
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Barber, M; J C S Chem Commun 1981, P325 CAPLUS
(2) Biemann, K; Biomed Environ Mass Spectrom 1988, V16, P99 MEDLINE
(3) Brown, R; Anal Chem 1995, V67, P3990 CAPLUS
(4) Brown, R; J Am Soc Mass Spectrom 1996, V7, P225 CAPLUS
(5) de Heer, M; J Am Chem Soc 2000, V122, P2355 CAPLUS
(6) Harvey, D; Org Mass Spectrom 1993, V28, P287 CAPLUS
(7) Karas, M; Int J Mass Spectrom Ion Processes 1987, V78, P53 CAPLUS
(8) Lennon, J; Protein Science 1997, V6, P2446 CAPLUS
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(10) Lockyer, N; Int J Mass Spectrom 1998, V176, P77 CAPLUS
(11) Mahoney, J; Rapid Commun Mass Spectrom 1991, V5, P441 CAPLUS
(12) Nagaoka, S; J Phys Chem 1992, V96, P2754 CAPLUS
(13) Nielsen, M; Chem Phys Lett 2000, V330, P558 CAPLUS
(14) Olumee, Z; Rapid Commun Mass Spectrom 1995, V9, P744 CAPLUS
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(16) Rodriguez-Santiago, L; J Phys Chem A 2000, V104, P1256 CAPLUS
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(19) Surman, D; J C S Commun 1981, P324 CAPLUS
(20) Takayama, M; Int J Mass Spectrom 1998, V181, PL1 CAPLUS
(21) Takayama, M; J Am Soc Mass Spectrom 2001, V12, P420 CAPLUS
(22) Vidavsky, I; J Am Chem Soc 1994, V116, P5865 CAPLUS
(23) Vorst, H; Rapid Commun Mass Spectrom 1990, V4, P202 CAPLUS
(24) Williams, D; J Am Chem Soc 1981, V103, P5700 CAPLUS
(25) Yamashita, M; J Phys Chem 1984, V88, P4451 CAPLUS
(26) Zubarev, R; J Am Chem Soc 1998, V120, P3265 CAPLUS
(27) Zubarev, R; J Am Chem Soc 1999, V121, P2857 CAPLUS

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CODEN: JAMSEF; ISSN: 1044-0305
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IT Laser desorption mass spectrometry
(photoionization, matrix-assisted; study of N-Cα bond cleavage of the peptide backbone via hydrogen abstraction using MALDI and deuterium exchange techniques)
IT Bond cleavage
Exchange reaction
Molecular structure determination methods
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RL: PRP (Properties)
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(study of N-Cα bond cleavage of the peptide backbone via hydrogen abstraction using MALDI and deuterium exchange techniques)
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(5) de Heer, M; J Am Chem Soc 2000, V122, P2355 CAPLUS
(6) Harvey, D; Org Mass Spectrom 1993, V28, P287 CAPLUS
(7) Karas, M; Int J Mass Spectrom Ion Processes 1987, V78, P53 CAPLUS
(8) Lennon, J; Protein Science 1997, V6, P2446 CAPLUS
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(10) Lockyer, N; Int J Mass Spectrom 1998, V176, P77 CAPLUS
(11) Mahoney, J; Rapid Commun Mass Spectrom 1991, V5, P441 CAPLUS
(12) Nagaoka, S; J Phys Chem 1992, V96, P2754 CAPLUS
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(19) Surman, D; J C S Commun 1981, P324 CAPLUS
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(21) Takayama, M; J Am Soc Mass Spectrom 2001, V12, P420 CAPLUS
(22) Vidavsky, I; J Am Chem Soc 1994, V116, P5865 CAPLUS
(23) Vorst, H; Rapid Commun Mass Spectrom 1990, V4, P202 CAPLUS
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(25) Yamashita, M; J Phys Chem 1984, V88, P4451 CAPLUS
(26) Zubarev, R; J Am Chem Soc 1998, V120, P3265 CAPLUS
(27) Zubarev, R; J Am Chem Soc 1999, V121, P2857 CAPLUS

ANSWER 20 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1994:265061 CAPLUS
DN 120:265061
ED Entered STN: 28 May 1994
TI Time-of-Flight Mass Spectrometry Of Underivatized Single-Stranded DNA Oligomers by Matrix-Assisted Laser Desorption
AU Wu, Kuang Jen; Shaler, Thomas A.; Becker, Christopher H.
CS Molecular Physics Laboratory, SRI International, Menlo Park, CA, 94025, USA
SO Analytical Chemistry (1994), 66(10), 1637-45
CODEN: ANCHAM; ISSN: 0003-2700
DT Journal
LA English
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 6, 73
AB Matrix-assisted laser desorption with concomitant ionization (MALDI) in conjunction with time-of-flight mass spectrometry (TOF-MS) has been used to analyze underivatized random-base single-stranded DNA (ssDNA) oligomers ranging from 10 to 89 nucleotides in length by embedding them in a solid matrix of 3-hydroxypicolinic acid. At 355-nm desorption wavelength, mass spectra of pos. and neg. ions measured by reflecting and linear time-of-flight mass spectrometers are compared. Results from the linear system show the ionization yield is approx. equal for each polarity. Metastable ion decay is significant for the larger ssDNA oligomer ions, which results in a decrease in signal intensity and the broadening of mass peaks. To obtain an acceptable signal-to-noise ratio on a reflecting TOF system, a higher laser irradiance is needed, which consequently causes further degradation of mass resolution With the apparent advantages of better sensitivity and mass resolution, it is concluded that a linear TOF system is better suited for the mass spectrometric anal. of ssDNA oligomers larger than about a 25-mer. The current system permits one-base resolution up to about a 40-mer. Mass accuracy for a 20-mer or smaller is within ±0.05%. Comparison of mass spectra from 5-ns and 35-ps pulse widths at the same energy d. shows no significant differences. Mechanisms for oligonucleotide ion production in these expts. are discussed.
ST DNA mass spectrometry laser desorption; time of flight mass spectrometry DNA; hydroxypicolinate matrix DNA mass spectrometry
IT Mass spectra
(of underivatized single-stranded DNA oligomers)
IT Deoxyribonucleic acids
RL: ANST (Analytical study)
(single-stranded, time-of-flight mass spectrometry of underivatized, by matrix-assisted laser desorption)
IT Mass spectrometry
(photodesorption, laser-induced, matrix-assisted, of underivatized single-stranded DNA oligomers)
IT Mass spectrometry
(time-of-flight, of underivatized single-stranded DNA oligomers)
IT 874-24-8, 3-Hydroxypicolinic acid
RL: ANST (Analytical study)
(in time-of-flight mass spectrometry of underivatized single-stranded DNA oligomers)

ANSWER 20 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1994:265061 CAPLUS
DN 120:265061
ED Entered STN: 28 May 1994
TI Time-of-Flight Mass Spectrometry Of Underivatized Single-Stranded DNA Oligomers by Matrix-Assisted Laser Desorption
AU Wu, Kuang Jen; Shaler, Thomas A.; Becker, Christopher H.
CS Molecular Physics Laboratory, SRI International, Menlo Park, CA, 94025, USA
SO Analytical Chemistry (1994), 66(10), 1637-45
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DT Journal
LA English
CC 9-5 (Biochemical Methods)
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ST DNA mass spectrometry laser desorption; time of flight mass spectrometry DNA; hydroxypicolinate matrix DNA mass spectrometry
IT Mass spectra
(of underivatized single-stranded DNA oligomers)
IT Deoxyribonucleic acids
RL: ANST (Analytical study)
(single-stranded, time-of-flight mass spectrometry of underivatized, by matrix-assisted laser desorption)
IT Mass spectrometry
(photodesorption, laser-induced, matrix-assisted, of underivatized single-stranded DNA oligomers)
IT Mass spectrometry
(time-of-flight, of underivatized single-stranded DNA oligomers)
IT 874-24-8, 3-Hydroxypicolinic acid
RL: ANST (Analytical study)
(in time-of-flight mass spectrometry of underivatized single-stranded DNA oligomers)

ANSWER 17 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1996:222109 CAPLUS
ED Entered STN: 16 Apr 1996
TI Functionality analysis of polymers by MALDI-MS
AU Pasch, H.
CS Deutsches Kunststoff-Institut, Darmstadt, 64289, Germany
SO Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March 24-28 (1996), POLY-374 Publisher: American Chemical Society, Washington, D. C.
CODEN: 62PIAJ
DT Conference; Meeting Abstract
LA English
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